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NOTICE OF ALLOWANCE AND FEE(S) DUE

26304 7590 08/24/2009

KATTEN MUCHIN ROSENMAN LLP
575 MADISON AVENUE
NEW YORK, NY 10022-2585

EXAMINER

MERED, HABTE

ART UNIT

PAPER NUMBER

2416

DATE MAILED: 08/24/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/769,701

01/30/2004

Akiko Okamura

FUJY 20.863

8595

TITLE OF INVENTION: TRANSMISSION BANDWIDTH CONTROL DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	11/24/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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P.O. Box 1450
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

26304 7590 08/24/2009

KATTEN MUCHIN ROSENMAN LLP
575 MADISON AVENUE
NEW YORK, NY 10022-2585

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,701	01/30/2004	Akiko Okamura	FUJY 20.863	8595

TITLE OF INVENTION: TRANSMISSION BANDWIDTH CONTROL DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	11/24/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
MERED, HABTE	2416	370-237000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,701	01/30/2004	Akiko Okamura	FUJY 20.863	8595
26304	7590	08/24/2009	EXAMINER	
KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			MERED, HABTE	
			ART UNIT	PAPER NUMBER
			2416	
DATE MAILED: 08/24/2009				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 978 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 978 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/769,701	OKAMURA ET AL.	
	Examiner	Art Unit	
	HABTE MERED	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication filed on 6/02/09.
2. ☒ The allowed claim(s) is/are 1,3-6,21,31-34, and 36-53 (renumbered 1-28).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
|--|---|

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2416

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/02/2009 has been entered.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Pedro C. Fernandez (41,741) on 8/14/09.

The application has been amended as follows:

- a. **Claim 35** has been cancelled.
- b. In the last line of **claim 1** the phrase "network." has been replaced with - -
- network;
wherein the quality non-guaranteed route searching module, when selecting a route for a flow that does not guarantee a forwarding quality, uses a ratio of a remaining bandwidth, as a link's residual bandwidth, which is a result of

Art Unit: 2416

subtracting the bandwidth for the flow that does not guarantee the forwarding quality from a link bandwidth as link's physical bandwidth, with respect to a bandwidth unreserved for the flow that guarantees the forwarding quality. - - -

c. In line 5 of **claim 21** the word "t-he" has been replaced by - - - the - - -

d. In the last line of **claim 52** the phrase "network." has been replaced with -
- - network;

wherein the quality non-guaranteed route searching step involves selecting a route for a flow that does not guarantee a forwarding quality, using a ratio of a remaining bandwidth, as a link's residual bandwidth, which is a result of subtracting the bandwidth for the flow that does not guarantee the forwarding quality from a link bandwidth as link's physical bandwidth, with respect to a bandwidth unreserved for the flow that guarantees the forwarding quality. - - -

e. In line 3 of **claim 46** the phrase "the path" has been replaced by - - - a path - - -

3. **Claims 1, 3-6, 21, 31-34, and 36-53** are allowed.

Allowable Subject Matter

4. The following is an examiner's statement of reasons for allowance:

Claim 1 and all of its dependent claims are allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or suggest

A transmission bandwidth control device for controlling a transmission route for a flow in a network, comprising:

a statistical information collecting unit for collecting pieces of statistical information from respective routers connected to the network;

a network information database for storing the statistical information collected;

a user request processing unit for accepting and processing a flow forwarding request from a user terminal;

a route control unit for searching for a route corresponding to the request from the user terminal by referring to the network information database;

a load sharing control unit for executing such a load sharing process as to generate router setting information for sharing a transmission load of the network by referring to the network information database; and

a router control unit for setting a router based on the route information determined by the route control unit and on the router setting information generated by the load sharing control unit,

wherein the route control unit includes a quality guaranteed route searching module searching for quality guaranteed route information corresponding to the flow forwarding request for the forwarding quality

Art Unit: 2416

guaranteed flow by referring to link statistical information concerning links between the respective routers from the network information database and a quality non-guaranteed route searching module searching for quality non-guaranteed route information corresponding to the flow forwarding request for the forwarding quality non-guaranteed flow, by referring to link statistical information concerning links between the respective routers from the network information database, the load sharing control unit executes the load sharing process by referring to the quality guaranteed route information and the quality non-guaranteed route information, and the router control unit sets the quality guaranteed route and the quality non-guaranteed route in accordance with the searched quality guaranteed route information and quality non-guaranteed route information,

wherein in the case where the quality guaranteed route searching module selects such a route as to minimize a cross-over hop count in the network, the quality non-guaranteed route searching module selects such a route as to maximize a residual bandwidth in the network;

wherein the quality non-guaranteed route searching module, when selecting a route for a flow that does not guarantee a forwarding quality, uses a ratio of a remaining bandwidth, as a link's residual bandwidth, which is a result of subtracting the bandwidth for the flow that does not guarantee the forwarding quality from a link bandwidth as link's physical bandwidth, with respect to a bandwidth unreserved for the flow that guarantees the forwarding quality.

Claim 52 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or suggest

A transmission control method of controlling a transmission route for a flow in a network, comprising:

collecting pieces of statistical information from respective routers connected to the network;

accepting a flow forwarding request from a user terminal;

quality-guaranteed-route searching for quality guaranteed route information corresponding to the request for forwarding the flow that guarantees a forwarding quality by referring to the network statistical information and the request from the user terminal;

quality-non-guaranteed-route searching for a quality non-guaranteed route corresponding to the request for forwarding the flow that does not guarantee the forwarding quality by referring to the network statistical information and the request from the user terminal;

executing such a load sharing process as to generate router setting information for sharing a transmission load of the network by referring to at least one of the network statistical information the quality guaranteed route information and quality non-guaranteed route information; and setting a router based on the

Art Unit: 2416

router setting information, the quality guaranteed route

information and the quality non-guaranteed route information,

wherein in the case where the quality guaranteed route searching step selects such a route as to minimize a cross-over hop count in the network, the quality non-guaranteed route searching step selects such a route as to maximize a residual bandwidth in the network;

wherein the quality non-guaranteed route searching step involves selecting a route for a flow that does not guarantee a forwarding quality, using a ratio of a remaining bandwidth, as a link's residual bandwidth, which is a result of subtracting the bandwidth for the flow that does not guarantee the forwarding quality from a link bandwidth as link's physical bandwidth, with respect to a bandwidth unreserved for the flow that guarantees the forwarding quality.

It is noted that the closest prior art, Dinha (US 6, 115, 372) and Kochkar et al (Kochkar et al, "QoS Routing Algorithm Based on Multi-classes Traffic Load", IEEE, 2001) disclose maximizing residual bandwidth. However the cited prior arts and the prior arts of record taken individually or in combination fail to disclose selecting a route by a quality non-guaranteed search module using a specific definition of a ratio of remaining bandwidth while maximizing a residual bandwidth of the network and is specifically claimed in the independent claims as the case where the quality guaranteed route searching module selects such a route as to minimize a cross-over hop count in the network, the quality non-

guaranteed route searching module selects such a route as to maximize a residual bandwidth in the network;

wherein the quality non-guaranteed route searching module, when selecting a route for a flow that does not guarantee a forwarding quality, uses a ratio of a remaining bandwidth, as a link's residual bandwidth, which is a result of subtracting the bandwidth for the flow that does not guarantee the forwarding quality from a link bandwidth as link's physical bandwidth, with respect to a bandwidth unreserved for the flow that guarantees the forwarding quality.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HABTE MERED whose telephone number is (571)272-6046. The examiner can normally be reached on Monday to Friday 10:30AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung S. Moe can be reached on 571 272 7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2416

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2416

/Habte Mered/
Examiner, Art Unit 2416
8-14-09